

REMARKS/ARGUMENTS

The Office Action mailed September 21, 2005 has been carefully considered. Applicants thank the Examiner for the kind allowance of claims 51-54. Reconsideration regarding claims 1-50 in view of the following remarks is respectfully requested.

The First 35 U.S.C. § 103 Rejection

Claims 1-10, 13-22, 25-34 and 37-46 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hejza¹ in view of Aune,² among which claims 1, 13, 25, 37 are independent claims. This rejection is respectfully traversed.

According to the Manual of Patent Examining Procedure (M.P.E.P.),

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.³

Claims 1, 13, 25, 37

Regarding claims 1, 13, 25, 37, the Office Action contends that the elements of the presently claimed invention are disclosed in Hejza except that Hejza does not teach the limitations of the local address pool being obtained from a global IP address pool and apportioning one or more of said at least one subnet between said global IP address pool and said local IP address pool based upon utilization of said local IP address pool. The Office Action further contends that Aune teaches the above limitations in an analogous system and method,

¹ U.S. Patent No. 6,577,628.

² NO 9904240 A.

³ M.P.E.P § 2143.

alleging that Aune teaches a global and local address pool and more addresses being allocated from the global pool to a local pool experiencing high usage, and that it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate Aune into Hejza in order to support the above limitations. Applicants respectfully disagree for the reasons set forth below.

First, contrary to the Office Action, Hejza does not teach any element of the present invention. Hejza does not show allocating an IP address from a local IP address pool designated for a remote domain if a request to connect to the remote domain is received. Hejza merely shows a possible technique for implementing QoS (Quality of Service) in a network that is directly accessible by users in various ways. Hejza says nothing about allocation of an IP address from a local IP address pool.

Further, Hejza does not show that the local IP address pool comprises one or more of at least one subnet, each of the at least one subnet specifying a contiguous set of one or more IP addresses. Hejza merely shows defining priority pools of contiguous network addresses according to a level of service and marking the pools according to the availability status of the network addresses. Hejza says nothing about subnets in the local IP address pool.

Further, Hejza does not show deallocating a network address back to the local IP address pool. Hejza merely shows releasing a network address if the message is a release message.

Further, as the Office Action admitted, Hejza failed to teach apportioning one or more of said at least one subnet between said global IP address pool and said local IP address pool based upon utilization of said local IP address pool. Therefore, Hejza does not teach any element of the invention of claims 1, 13, 25, 37.

Aune shows that a local address pool per processor is supplied with a pack of addresses from a global address pool when the local pool is going empty. This may teach apportioning one

or more of the subnets between the global IP address and the local IP address pool based upon utilization of the local IP address pool. However, Aune does not show any other elements of the claimed invention, and therefore the combination of Hejza and Aune does not support to create all the elements of claim 1, 13, 25, 37. Further, there is no suggestion to combine Aune with Hejza, whether explicitly or implicitly in Aune or Hejza, or in the knowledge generally available to one of the ordinary skill in the art at the time this invention was made. Accordingly, it would not have been obvious to a person skilled in the art to create the invention of claims 1, 13, 25, 37.

Claims 2, 14, 26, 38

Regarding claims 2, 14, 26, 38, the Office Action contends that Hejza teaches configuring the local IP address pool with a subnet from at least one subnet. Applicants respectfully disagree for the reasons set forth below.

First of all, as to dependent claims 2, 14, 26, 38, the arguments set forth above are equally applicable here. The base claims 1, 13, 25, 37 being allowable, the dependent claims 2, 14, 26, 38 must also be allowable. Accordingly, claims 2, 14, 26, 38 are not obvious.

Further, Hejza merely shows dividing an internet service provider's network address space into priority pools and marking the priority pools as network addresses are allocated and deallocated. As mentioned above, a priority pool is defined by a level of service, not a remote domain. Hejza says nothing about configuring the local IP address pool designated for a remote domain, and thus does not show configuring the local IP address pool with a subnet from at least one subnet. Accordingly, claims 2, 14, 26, 38 are not obvious.

Claims 3, 15, 27, 39

Regarding claims 3, 15, 27, 39, the Office Action contends that Aune teaches requesting one or more packs of addresses if the pool utilization exceeds a first threshold; and releasing one or more packs of addresses if pool utilization falls below a second threshold. The Office Action further contends that one of the ordinary skill in the art would have been motivated to combine Hejza with Aune in order to provide a high and even degree of utilization of address resources as suggested by Aune. Applicants respectfully disagree for the reasons set forth below.

First of all, as to dependent claims 3, 15, 27, 39, the arguments set forth above are equally applicable here. The base claims 1, 13, 25, 37 being allowable, the dependent claims 3, 15, 27, 39 must also be allowable. Accordingly, claims 3, 15, 27, 39 are not obvious.

Further, Aune merely shows that a local pool of a processor is supplied with a pack of addresses from the global pool upon the request of the processor where the processor gives addresses to subscribers and then the local pool is going empty, i.e., empty or almost empty. In other words, in Aune, the number of IP addresses that are unused and remain in the local pool is monitored. Aune does not show monitoring the number of IP addresses used by subscribers and examining if the utilization of the local IP addresses exceeds a certain threshold. On the contrary, the present invention requires monitoring the number of local IP addresses used by remote users and examining if the utilization of the local IP addresses exceeds a certain threshold such as high watermark to determine to request one or more subnets (page 16, line 23- page 17, line 3 of the specification).

Further, Aune merely shows that a pack of addresses is released when the local pool exceeds a predetermined limit in the number of addresses that can be contained in the local pool. In Aune, the number of IP addresses that are unused and remain in the local pool is monitored. Aune does not show monitoring the number of IP addresses used by subscribers and examining if

the utilization of the local IP addresses falls below a certain threshold. On the contrary, the present invention requires monitoring the number of local IP addresses used by remote users and examining if the utilization of the local IP addresses falls below a certain threshold such as low watermark to determine to release one or more subnets (page 16, line 23- page 17, line 5 of the specification).

Further, there is no suggestion or motivation to combine Aune with Hejza, whether explicitly or implicitly in Aune or Hejza, or in the knowledge generally available to one of ordinary skill in the art at the time this invention was made. Accordingly, claims 3, 15, 27, 39 are not obvious.

Claims 4, 16, 28, 40

Regarding claims 4, 16, 28, 40, the Office Action contends that Hejza teaches the local pool size can be configured automatically from a network administration terminal as usage conditions change and Aune teaches the local pools reporting utilization information to the global processor at regular intervals. The Office Action further contends that it would have been obvious to modify the combination of Hejza and Aune such that the local pool is polled for utilization information at regular intervals set at the network administration. Applicants respectfully disagree for the reasons set forth below.

First of all, as to dependent claims 4, 16, 28, 40, the arguments set forth above are equally applicable here. The base claims 1, 13, 25, 37 being allowable, the dependent claims 4, 16, 28, 40 must also be allowable. Accordingly, claims 4, 16, 28, 40 are not obvious.

Further, contrary to the Office Action, Hejza does not show the local IP pool size can be configured automatically from a network administration terminal as usage conditions change.

Rather, Hejza merely shows that the priority pool, not local IP address pool, is automatically subdivided as the usage condition of network addresses in the priority pool changes.

Aune shows that application processors report the use of IP addresses to a global processor at regular intervals. However, Aune does not show polling local IP address pool at predetermined intervals to obtain local IP address pool utilization.

Further, there is no suggestion or motivation to combine Aune with Hejza, whether explicitly or implicitly in Aune or Hejza, or in the knowledge generally available to one of ordinary skill in the art at the time this invention was made. Accordingly, claims 4, 16, 28, 40 are not obvious.

Claims 5-8, 17-20, 29-32, 41-44

Regarding claims 5-8, 17-20, 29-32, 41-44, the Office Action contends that the combination of Hejza and Aune teaches requesting and releasing a subnet of a predetermined size and suggests that the size of the subnet can be adjusted to minimize traffic and that any adjustment is going to be relative to a previous size and the current subnet size and the initial subnet size are the same if there is currently only one subnet and a second is being requested. Applicants respectfully disagree for the reasons set forth below.

First of all, as to dependent claims 5-8, 17-20, 29-32, 41-44, the arguments set forth above are equally applicable here. The base claims 1, 13, 25, 37 being allowable, the dependent claims 5-8, 17-20, 29-32, 41-44 must also be allowable. Accordingly, claims 5-8, 17-20, 29-32, 41-44 are not obvious.

Further, Aune merely shows setting the size of address-blocks and dynamically adjusting the size of the blocks to achieve as little traffic as possible. Aune shows that where the block size is set large and thus the number of address-blocks becomes small, the traffic between a

global processor and external processors is little. Aune, however, says nothing about a specific size of address-blocks or the size relative to the one at a particular moment to achieve as little traffic as possible. On the contrary, the present invention provides a predetermined number of IP addresses or a subnet size relative to the current subnet size or the initial subnet size in order to adjust the size of a requested subnet.

Further, there is no suggestion or motivation to combine Aune with Hejza, whether explicitly or implicitly in Aune or Hejza, or in the knowledge generally available to one of ordinary skill in the art at the time this invention was made. Accordingly, claims 5-8, 17-20, 29-32, 41-44 are not obvious.

Claims 9-10, 21-22, 33-34, 45-46

Regarding claims 9-10, 21-22, 33-34, 45-46, the Office Action contends that the combination of Hejza and Aune teaches the releasing further comprises removing the summarized route for said one or more subnet from a routing table associated with the local IP address pool and the requesting further comprises inserting a route summary for the requested one or more subnet if the requested one or more subnet is received. Applicants respectfully disagree for the reasons set forth below.

First of all, as to dependent claims 9-10, 21-22, 33-34, 45-46, the arguments set forth above are equally applicable here. The base claims 1, 13, 25, 37 being allowable, the dependent claims 9-10, 21-22, 33-34, 45-46 must also be allowable. Accordingly, claims 9-10, 21-22, 33-34, 45-46 are not obvious.

Further, Hejza merely shows that packet forwarding devices perform packet forwarding according to the classes of services supported by identifying a range of network addresses that are to receive a particular measure of services associated with the class of service. On the

contrary to the Office Action, Hejza says nothing about that releasing a subnet to the global IP address pool comprises removing the summarized route from a routing table associated with the local IP address pool and requesting a subnet to the global IP address pool comprises inserting a route summary for the requested subnets. Accordingly, claims 9-10, 21-22, 33-34, 45-46 are not obvious.

The Second 35 U.S.C. § 103 Rejection

Claims 12, 24, 36, and 48-50 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Aune in view of Applicant's admitted prior art (AAPA). This rejection is respectfully traversed.

Claim 12, 24, 36, 48

Regarding claims 12, 24, 36, 48, the Office Action contends that the combination of Hejza and Aune teaches the apparatus and the method comprising a remote domain, however, failed to teach the remote domain comprising a virtual network (VPN). The Office Action further contends that AAPA teaches that PPP sessions are typically terminated on a home gateway, at a remote domain such as a VPN, and that it would be obvious to one having ordinary skill in the art at the time of the invention to incorporate AAPA into the combination of Hejza and Aune in order to support the invention of claims 12, 24, 36, 48. Applicants respectfully disagree for the reasons set forth below.

As to dependent claims 12, 24, 36, 48, the arguments set forth with respect to independent claims 1, 13, 25, 37 are equally applicable here. AAPA adds nothing with respect to all the elements of independent claims 1, 13, 25, 37. Accordingly, claims 12, 24, 36, 48 are not obvious.

Claim 49

Regarding claim 49, the Office Action admits that the combination of Hejza and Aune fails to teach the global IP address pool comprises an Authentication, Authorization and Accounting (AAA) server and the global IP address interface comprises an AAA proxy configured to communicate with said AAA server using the RADIUS protocol. The Office Action further contends that AAPA teaches that AAA servers and the RADIUS protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user, and that it would be obvious to one having ordinary skill in the art at the time of the invention to incorporate AAPA into the combination of Hejza and Aune in order to support the invention of claim 49. Applicants respectfully disagree for the reasons set forth below.

As to dependent claim 49, the arguments set forth regarding independent claim 37 are equally applicable here. AAPA adds nothing with respect to all the elements of independent claim 37. Accordingly, claim 49 is not obvious.

Claim 50

Regarding claim 50, the Office Action admits that the combination of Hejza and Aune failed to teach the global IP address pool comprises DHCP server and the global IP address interface comprises an Ring Access Controller client configured to communicate with said DHCP server using the DHCP protocol. The Office Action further contends that AAPA teaches that DHCP servers and the DHCP protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user, and it would be obvious to one having ordinary skill in the art at the time of the invention to incorporate AAPA into the combination of Hejza and Aune in order to support the invention of claim 50. Applicants respectfully disagree for the reasons set forth below.

As to dependent claim 50, the arguments set forth regarding independent claim 37 are equally applicable here. AAPA adds nothing with respect to all the elements of independent claim 37. Accordingly, claim 50 is not obvious.

Allowable Subject Matter (re: claims 11, 23, 35, 47)

The Examiner is thanked for the finding of allowable subject matter in claims 11, 23, 35, 47 if rewritten in the independent form including all of the limitations of the base claims and any intervening claims. Applicants acknowledge the Examiner's statement of the reasons for allowance as set forth in the Office Action. However, Applicants point out that the reasons for allowability of the above referenced claims are not limited to the reasons for allowance as set forth in the Office Action. As to dependent claims 11, 23, 35, 47, the arguments set forth above with respect to independent claims 1, 13, 25, 37 are equally applicable here. The base claims being allowable, claims 11, 23, 35, 47 must also be allowable in the form of dependent claims.

In view of the foregoing, it is respectfully asserted that all rejections and objections should be withdrawn and that the claims are now in condition for allowance.

Conclusion

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

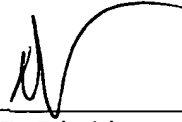
If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our deposit account No. 50-1698.

Respectfully submitted,

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Dated: December 21, 2005

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